TRANSACTIONS OF THE PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, November 6, 1893.

DR. WILLIAM HUNT, President, in the Chair.

OPERATIVE TREATMENT OF CLEFT PALATE.

DR. J. EWING MEARS discussed the treatment of *Cleft of the Hard and Soft Palates*, saying that in an experience extending over a period of twenty-five years he had treated by operative procedures upward of 100 cases of deformities of the palate. These cases had included all forms of congenital and acquired cleft—deformity limited to the soft palate, partial and complete in its extent; of the hard palate—partial and complete, including involvement of intermaxillary bone, and the upper lip, with either single or double cleft. With regard to the cleft of the soft palate, he had observed that in nearly all cases of complete cleft there had coexisted a cleft in the hard palate, implicating to a slight extent the horizontal plates of the palate bone. This condition has an important relation to the success obtained in effecting closure, as further noted when discussing operative measures.

Of acquired cleft he had met with various forms—from simple perforation, by a small opening, to almost entire obliteration of the soft and hard palates, with destruction of portion of the osseous structures of the nasal cavities. In one instance there was not only a fissure in the median line, but the lateral portions were united by firm adhesions to the posterior wall of the pharynx.

In congenital cleft of the hard palate he had met with instances in which the fissure being bilateral there was more or less deficiency of the vomer, and in other cases the fissure being limited largely to one side, the vomer, somewhat deflected, had been found in articulation with the side less involved, thus permitting communication between one nasal fossa and the oral cavity only.

The conditions presented by persons the subject of cleft palate, are defective articulation, defective deglutition, and, as a rule, more or less chronic inflammation of the nasal and pharyngeal spaces. These conditions vary in degree in accord with the extent of the lesion, but he had observed as great an involvement of articulation where a slight notch only existed in the uvula as where both soft and hard palates have been fissured. The important function of the velum is, by its approximation to the posterior wall of the pharynx, to shut off the cavity of the mouth from the cavity of the nose, so as to prevent the passage of sounds and of food into the latter during articulation and deglutition. The muscles of the velum control by their action the opening and closing of the posterior nasal apertures, as those connected with the nasal cartilages regulate the opening and closing of the anterior nasal apertures. In cases of palate fissure in adults he had observed the use made by the anterior muscles in the effort to do the duty of the velum in so narrowing or contracting the anterior nasal openings as to prevent the escape of sounds or food. The chronic inflammation which exists in cases, as a rule, of extensive fissure, is due to the exposure of the parts to the effect of the air which comes directly in contact with the surfaces without passing through the recesses of the normal nasal fossæ.

The object to be accomplished by treatment is to close the clefts. This can be done either by the adaptation of artificial appliances—obturators—or by operative procedures—staphylorrhaphy, when upon the soft palate; uranoplasty, when upon the hard palate. Since the introduction of these methods each has had its period of employment. Discouraged by the failures to obtain perfect results by operation, artificial appliances came into vogue and were employed to the exclusion of operative measures. These, failing to satisfy the requirements and especially failing to give comfort to the patient, lost favor and a revival of operative methods has occurred. In his experience he had never found the use of the obturator in cleft of the soft palate satisfactory. In cleft of the hard palate alone he had frequently advised its employment, where the rudimentary palatal processes had been so narrow as to forbid operation, or where the opening was not very large. In some cases, in adults, of cleft of soft and hard palates, he had closed the soft palate by operation and had adapted to the opening in the hard palate an obturator. In children, he always advised closure by operation.

He had operated at various periods of life—from three years to fifty. He advises operation at an early age in order that the growth of the parts may be facilitated, and that the education of the child may receive proper attention. In paring the edges of the cleft he secures as large a raw surface as possible in order that the union may be strong. Having tried many forms of needles and varieties of sutures, he had found the simplest the best. The instrument employed consists of a handle to which needles of various curves can be securely fastened. Silver-wire sutures of medium size are used, a strong linen thread, double, being first deposited and the wire suture hooked into the loop and drawn through; the suture is deposited on one side at a time. The needle is introduced some distance from the edge so as to include a sufficient amount of the tissue to hold the edges firmly in apposition without tension. When the sutures are all in position the edges are brought together and the muscles divided as may be necessary to relieve all tension. The tensor palati is divided near to the hamular process, and the palato-glossi and palato-pharyngei as low down as they can be reached. In his later operations he has removed the sutures earlier, beginning on the fifth or sixth day to remove those affording the least support and completing removal by the seventh day. This plan has given better results. Liquid food, milk chiefly, is administered by a spoon, whilst the sutures are in position. The patient gradually returns to the use of solid food.

In operations upon the hard palate the method of Sir William Ferguson has been latterly employed, having failed by other methods to secure good results. The steps of the operation consist in freshening the edges, depositing the sutures through the openings made with the drill in the bony processes, division of the processes by the chisel or saw, drawing of the segments thus formed to the middle line, and securing them in place by twisting or shotting the wire. The section of the bone should be made so as to avoid wounding the vessels and nerves which come into the oral cavity through the posterior palatine canals, and which lie in a groove at the base of the alveolar process. Division of the soft palate downward is necessary to bring the segments in position without undue tension. The cavities formed by the transplantation of the segments are plugged with iodoform gauze, 5 per cent., which affords support and controls hæmorrhage. On the third day the plug is removed, and as the spaces close they are gradually reduced in size.

End-results. As to operative procedures on the soft palate. If careful examination has been made to detect the slight notch in the hard palate and the bone has been divided, union in entire extent has occurred. In cases of long uvula non-union has sometimes occurred at the very tip. This has been remedied by subsequent operation on the end; if the length permits, cut off.

As to the hard palate. In certain cases slight necrosis of portions of the segments, caused by splintering at the time of section, has occurred and the pieces removed. This has not interfered with the reparative process. In one instance the space on one side, left after drawing segments to the median line, was so large that it did not close completely—an obturator was successfully adapted.

As to the restoration of function. In all cases deglutition has been markedly improved, rendered perfect except in a few instances of short and rigid vela in which hasty and careless efforts at swallowing are accompanied by the passage, especially of liquids, into the nasal cavities.

The improvement in articulation has varied greatly, and the improvement has depended largely upon the size and conformation of the faucial and pharyngeal spaces. In a few it has been complete. In many the improvement is partial but progressive, especially in children where pains are taken to educate them properly. In some cases where he had been able to retain charge of the patient he had rendered assistance, as growth took place, by subsequent division of the palate muscles, thus increasing the movement of the velum.

In all cases, children and adults, the effect upon the *morale* has been good, and for this reason, if no other, the operation is justified.

MULTIPLE CYSTOMAS OF THE LIVER TREATED BY INCISION AND EVACUATION.

Dr. John B. Roberts related the case of a German woman, fifty-six years of age, who was admitted to the Woman's Hospital on October 2, 1893. For ten years she had noticed a swelling in the right side of the abdomen below the ribs, which for about one year had been somewhat painful. She had always been a healthy woman, and had borne seven children. The menopause had been established ten years previous to her admission. One week before entering the hospital she began to suffer with dyspnœa and cough, accompanied by constipation and fever.

On admission, in the abdomen was discovered a large mass occupying the greater part of the right hypochondriac and lumbar regions. The tumor was irregular in outline, and near the middle line presented a particularly marked elevation, which was elastic on pressure, and gave the examiner the impression that it was a cyst. The woman was not jaundiced, and her bowels were moved freely after the administration of Epsom salt and an enema.

On October 20 he made an incision some four inches long in the median line, extending from a point near the ensiform cartilage downward to one a little below the umbilicus. The incision uncovered that protuberant portion of the tumor which was conspicuous before operation was undertaken. This was evidently a cyst occupying the right lobe of the liver immediately below and to the right of the suspensory ligament. By inserting the hand into the peritoneal cavity, it was there found that both the right and the left lobes of the liver were occupied by numerous cysts, varying in size from an inch to four inches in diameter. The liver, by reason of these cystic growths, was enormously enlarged, and the suspensory ligament extended almost to the umbilicus, because of the growth upward and forward of the upper surface of the liver. The gall-bladder could be felt beneath the enlarged right lobe, and by palpation it was discovered to contain an irregular calculus. There was a little ascitic fluid in the peritoneal cavity. The cysts seemed not to communicate with each other, but to develop independently throughout the substance of the organ.

The prominent cyst over which the incision was made was stitched to the parietal peritoneum by a continuous suture, a temporary dressing applied so as to delay puncture until adhesion with the anterior abdominal wall.

Seven days later he laid open the adherent cyst, and through this other cysts, until some eight or ten cysts of various sizes had been opened, by incising the walls between them. He then cut away the anterior wall of the first cyst, making the opening into it correspond very nearly with the aperture in the parietes of the abdomen.

The irregular cavities left by the evacuation of the cysts' contents were thoroughly washed with hot water, and the whole space packed with iodoform gauze. The patient showed comparatively little shock during the operation, reacted promptly, and continued to do well, until at the end of three weeks she suddenly and unexpectedly died. Upon autopsy the liver was found greatly enlarged, weighing eleven and a half pounds, and riddled throughout with cysts. The fluid removed from one of the cysts was examined microscopically for echinococcus hooklets, but none were found. Chemical examination showed it to be albuminous—a condition opposed to the theory of the case being one of multiple hydatid cysts.

Both kidneys were found also greatly enlarged and riddled with cysts.

A condition of pleuro-pneumonia, with cardiac thrombi, accounted for death. The reporter had been able to find in literature no case of such extensive cystic degeneration of the liver.

EXCISION IN THE TREATMENT OF SPINA BIFIDA.

DR. JOHN B. ROBERTS reported the history of a case of spina bifida which he had subjected to excision of the meningeal sac. The patient was a healthy and otherwise well-formed male child, seventeen days old. The tumor due to congenital deformity occupied the upper portion of the sacrum. It was hemispherical and measured about an inch and a half vertically and horizontally, and was elevated above the surface of the back about one inch. The central portion consisted of translucent tissue upon which was an ulcerated-looking space toward the lower portion of the tumor. This granular or ulcerated condition was present at the time of birth. The normal skin extended up the tumor on each side to a sufficient extent to leave only about half the surface of the hemispherical swelling of translucent tissue. The mass fluctuated on pressure and seemed to increase little, if any, when the child cried. Under the circumference of the tumor on each side could be felt a hard edge which seemed almost like bone, but which was evidently the margin of the muscles of the back or the posterior border of the iliac bone on each side.

A puncture was made on the right side of the tumor above the margin of the skin, and about two drachms of colorless fluid allowed to escape. No symptoms occurred during this evacuation of cerebrospinal fluid. The collapsed sac was then excised by two curved incisions meeting at a point above and below the protrusion in healthy skin. Six or eight nerves were found attached to the internal surface of the translucent membrane forming the dome of the tumor. These were consequently dissected loose as close to the membrane as possible. On each side of the sacrum in front were seen similar nerves, but of larger size, entering the anterior sacral foramina. These, as well as the nerves dissected from the sac, came out of an opening at the upper portion of the sacrum which led to the vertebral canal. This opening would not entirely admit the tip of the little finger and was circular, being about three-eighths of an inch in diameter. In this opening lay what was supposed to be the cauda equina, which very nearly filled the entire orifice. This bony opening was situated very close to the upper edge of the external tumor, which had been developed principally below the opening rather than over it. The dura mater was apparently adherent to the internal surface of the tumor wall. The posterior wall of the vertebral canal in the sacral region was absent below the opening mentioned. The anterior sacral nerves were not interfered with, but the posterior ones with the cauda equina, or lower end of the cord, were pushed into, but not through, the bony opening by the finger tip. The youth of the child and the serious character of the operation deterred the operator from undertaking an osteoplastic procedure, and even from interfering with the contents of the sacral opening.

The skin flaps left by the incision of the sac were then brought together over the site of operation by interrupted catgut sutures. No drainage was used and the wound was sealed by strips of gauze saturated with iodoform and collodion. Some bloody oozing from the wound necessitated redressing upon the following day and the insertion of an acupressure pin at both the upper and lower angles of the insertion. Sloughing of the tissue compressed by these pins subsequently took place, with extension of the sloughing process to the rest of the wound flap with pus infection and secondary hæmorrhage, readily controlled by pressure. Beginning the day after the operation and continuing during three days there were convulsive seizures, limited at first to the posterior cervical, occipital and ocular muscles, but later becoming general. By the administration of potassium bromide these were controlled so that none were observed after the third day. On the fifteenth day the infant died from exhaustion due to the hæmorrhage and sepsis. No autopsy.

Dr. Roberts stated that, despite the fatal issue of this case, a study of it, as well as of surgical literature, convinced him that in properly selected cases excision is justifiable, and will be found satisfactory in relieving the disability due to the congenital defect of spina bifida. The injection of the sac seemed to him unscientific because it is really groping in the dark. The conclusion that incision, exposing the contents of the sac, followed probably by excision, is the preferable method of dealing with bifid spine is confirmed by the results attained in many operations upon the brain and spinal cord.

The securing of a vertebral canal by some osteoplastic procedure would seem to be a very desirable addition to the original operation by excision. It is yet to be determined how much better the condition of the patient is, however, after such attempts at securing a bony closure of the gap. Theoretically, it would seem desirable, but many cases have been satisfactorily cured by operation, in which removal of sac and simple suturing of the skin over the gap in the bone were done.

TUMOR WITHIN THE SHEATH OF THE SCIATIC NERVE.

DR. THOMAS S. K. MORTON related the history of a case of sciatic nerve tumor, as follows: The patient was a woman, forty-two years of age. For a year the existence of a small nodule, deeply situated upon the posterior portion of the left thigh, had been known. This had grown slowly at first, but for the last three months with increasing rapidity. It caused little or no discomfort. When admitted to the Polyclinic Hospital, October 3, 1893, it had the shape and size of a large goose-egg, and lay exactly in the course of the great sciatic nerve, midway between the tuberosity of the ischium and the flexure of the knee-joint. When exposed by incision it was seen that the fibres of the sciatic nerve were spread out upon the growth, running around and over it, while the tumor proper was separately enclosed in a capsule within the sheath. The growth was readily separated from the sheath of the nerve in all directions except at points at the extreme proximal and distal extremities, where a few nerve fibres entered and emerged from it respectively. Some small blood-vessels appeared to accompany the strand of nerve substance into the tumor. These fibres having been divided, the growth was lifted out without further difficulty. Upon examining the cavity in the nerve sheath from which it came, it was observed that most of the bundles of the sciatic were in advance of and had been spread out over the external surface of the growth, but that no appreciable injury had been done them with the exception of the few fibres which had necessarily been divided as they entered the tumor. No sutures were applied to the nerve sheath, nor were any ligatures called for. The wound was closed without drainage by alternate deep and superficial sutures and a pad of dressing so applied as to make compression upon the cavity left by the tumor. The operation was followed for two days by some pain in the whole sciatic distribution, but especially in the region supplied by the external popliteal, but no loss of power ensued. All pain disappeared in forty-eight hours, however, and afterward she had no disagreeable sensations. Upon the seventh day all sutures were removed and absolute primary union throughout was found. On the tenth day she began to walk about, and four days later walked home, apparently as well as ever. Up to this date she has so continued.

The tumor was ovoid in shape, four inches in length and seven in circumference where thickest. At either extremity a few nerve fibres and blood-vessels appeared to enter or take their exit. Otherwise there were neither adhesions nor pedicle. The growth was encapsulated with a tough brownish-colored membrane which brought away small granular portions of the tumor when forcibly separated from it by peeling. The neoplasm proper was of a yellowish-brown color, rather dry, and cut like fibro-fatty tissue. Exactly in the centre of the mass was a cavity, not definitely separated from the growth, which contained about half an ounce of bloody fluid. Most unfortunately, during the preparation of the specimen for further study, it was accidentally destroyed, so that the diagnosis of sarcoma lacks microscopical confirmation.

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